What is Claimed is:

1. A method for categorizing voice samples of a person being tested for near term suicidal risk as a prelude to such testing, comprising the steps of:

A. setting an analysis window to a selected sample set length of 512, where the particular sample is identified as the Kth sample;

B. reading the Kth sample;

C. computing wavelet transforms of such Kth sample for scales in powers of 2 running from the 1st power to the 5^{th};

D. storing the signal energy value as computed for each scale;

E. checking to determine whether the Kth sample is the last of the sample set and if additional samples remain, repeating steps "b" through "d";

F. setting the median energy distribution at the scale for 2 to the 4^{th} power as a threshold;

G. successively for each sample comparing the energy across the scales;

H. if the maximum energy is at the scale for 2 to the 1st power, identifying the segment as unvoiced and proceeding to the next succeeding sample;

I. if the segment maximum energy is at one of the scales of 2 to the 2^{nd} power through 2 to the 5^{th} power, identifying the segment as being either voiced or silence; and

J. if the segment energy at the 2 to the 4^{th} power scale exceeds the threshold, classifying the segment as voiced; otherwise classifying it as silence.

2. A method for determining jitter variations in fundamental frequency of the voice of a person being evaluated for near-term suicidal risk, comprising the steps of:

A. setting an analysis window to a selected sample set length of 512 where the particular sample is identified as the Kth sample;

B. computing the wavelet transform for the sample set at scale 2 to the 4^{th} power, with a scale factor defined by the quotient of the wavelet center frequency at level 0 and the desired center frequency;

C. selecting two consecutive segments of the vocal signal of such person which are voiced segments and generating separate pulse trains in which the heights of the pulses correspond to amplitude of positive and negative peaks of the wavelet transformed speech signal;

D. thresholding the segments of the vocal signal to discard peaks corresponding to possible unvoiced samples;

E. computing a fundamental period over the entirety of each of the two segments by:

i. finding the location of the first peak of the autocorrelation of the smoothed spectrum to the right of the zero lag component;

ii. detecting a starting pulse exhibiting the property of being larger than both the pulse immediately preceding and immediately following such pulse and being greater than 50% of the global maximum of the pulse sequence;

iii. locating following prominent pulses as detected in the neighborhood of expected locations determined by the peak of the autocorrelation sequence;

iv. selecting, between two sequences of positive and negative peaks, the peak having the largest magnitude; and

v. taking the difference between two consecutive prominent pulses as the duration for the glottal cycle; and

F. determining period-to-period fluctuation of fundamental frequency as the inverse of said glottal cycle for said two consecutive prominent pulses.

3. A method for testing voice samples of a person for near-term suicidal risk, comprising the steps of:

A. setting an analysis window to a selected sample set length of 512 consecutive segment voice signals from the person, where the particular sample is identified as the Kth sample;

B. reading the Kth sample;

C. computing wavelet transforms of such Kth sample for scales in powers of 2 running from the 1st power to the 5^{th};

D. storing the signal energy value as computed for each scale;

E. checking to determine whether the Kth sample is the last of the sample set and if additional samples remain, repeating steps "b" through "d";

F. setting the median energy distribution for the scale at 2 to the 4^{th} power as a threshold;

G. successively for each sample comparing the energy across the scales;

H. if the maximum energy is at the scale for 2 to the 1st power, identifying the segment as unvoiced and proceeding to the next succeeding sample;

I. if the segment maximum energy is at one of the scales 2 to the 2^{nd} power through 2 to the 5^{th} power, identifying the segment as being either voiced or silence;

J. if the segment energy at the 2 to the 4^{th} power scale exceeds the threshold, classifying the segment as voiced; otherwise classifying it as silence;

K. computing the wavelet transform for the sample set at scale 2 to the 4^{th} power, with a scale factor defined by the quotient of the wavelet center frequency at level 0 and the desired center frequency;

L. selecting two consecutive segments of said vocal signal of such person which have been identified as voiced segments and generating two

separate pulse trains in which heights of pulses correspond to amplitude of positive and negative peaks of the wavelet transformed speech signal;

M. thresholding the segments of the vocal signal to discard peaks corresponding to possible unvoiced samples;

N. computing a fundamental frequency over the entirety of each of the two segments by

i. finding the location of the first peak of the autocorrelation of the smoothed spectrum to the right of the zero lag component;

ii. detecting a starting pulse exhibiting the property of being larger than the pulse immediately preceding and immediately following such pulse and being greater than 50% of the global maximum of the pulse sequence;

iii. locating following prominent pulses as detected in the neighborhood of expected locations determined by the peak of the autocorrelation sequence;

iv. selecting between two sequences of positive and negative pulse peaks the peak having the largest magnitude; and

v. taking the difference between two consecutive prominent pulses as the duration for the glottal cycle; and

O. determining period-to-period fluctuation of fundamental frequency as the inverse of said glottal cycle for said two consecutive prominent pulses.

4. A method for assessing near-term suicidal risk through voice analysis independently of verbal content of the voice, comprising:

A. eliciting a voice sample from a person to be evaluated for near-term suicidal risk and converting said sample into electronically processable signal form;

B. time-wise dividing said signal into segments according to whether the person was silent, speaking voiced words or making unintelligible unvoiced sounds;

C. if there are two consecutive voiced segments, measuring fundamental frequency for each of said two segments;

D. computing the difference in measured fundamental frequency for said two segments;

E. comparing the difference in measured fundamental frequency to fundamental frequency difference data for known near-term suicidal risk persons, known depressed persons not at near-term suicidal risk and non-depressed persons from a control group, to determine whether the person is at near-term suicidal risk or is merely depressed.

5. Apparatus for assessing near-term suicidal risk through voice analysis independently of verbal content of an elicited vocal utterance from a person to be evaluated for near-term suicidal risk, comprising:

A. means for converting said utterance into electronically processable signal form and time-wise dividing said signal into segments according to whether the person was silent, speaking voiced words or making unintelligible unvoiced sounds;

B. comparator means for determining whether there are two consecutive voiced segments and, if so, measuring fundamental frequency for each of said two segments;

C. means for computing difference in measured fundamental frequency for said two segments; and

D. means for comparing difference in measured fundamental frequency to fundamental frequency difference data for known high near-term suicidal risk persons, known depressed persons not at near-term suicidal risk and non-depressed persons from a control group, to determine whether the person is at near-term suicidal risk or is merely depressed, and providing a visual and/or audible alarm signal upon finding near-term suicidal risk.

6. Apparatus for evaluating whether a person is at high near term risk of suicide by determining jitter variations in fundamental frequency of the voice of such a person being evaluated for near-term suicidal risk, comprising:

A. counter means for setting an analysis window to a selected sample set length of 512 where the particular sample is identified as the Kth sample and computing the wavelet transform for the sample set at scale 2 to the 4^{th} power, with a scale factor defined by the quotient of the wavelet center frequency at level 0 and the desired center frequency;

B. means for selecting two consecutive segments of the vocal signal of such person which are voiced segments and generating two separate pulse trains in which the heights of the pulses correspond to the amplitude of positive and negative peaks of the wavelet transformed speech signal, thresholding the segments of the vocal signal to discard peaks corresponding to possible unvoiced samples and computing a fundamental period over the entirety of each of the two segments by:

i. finding the location of the first peak of the autocorrelation of the smoothed spectrum to the right of the zero lag component;

ii. detecting a starting pulse exhibiting the property of being larger than the pulse immediately preceding and immediately following such pulse and being greater than 50% of the global maximum of the pulse sequence;

iii. locating following prominent pulses as detected in the neighborhood of expected locations determined by the peak of the autocorrelation sequence;

iv. selecting, between two sequences of positive and negative peaks, the peak having the largest absolute magnitude; and

v. taking the difference between two consecutive prominent pulses as the duration for the glottal cycle; and

C. means for determining period-to-period fluctuation of fundamental frequency as the inverse of said glottal cycle for said two consecutive prominent pulses, comparing said fundamental frequency fluctuation for

such person to that of persons known to be not at near term risk for suicide and providing a clinician with a visual and/or audible signal indicating the results of such comparison.

7. Apparatus for segregating into categories voice samples of persons being tested for near term suicidal risk as a prelude to such testing, comprising:

A. counting means for setting an analysis window to a selected sample set length of 512, where the particular sample is identified as the Kth sample, and reading the Kth sample;

B. means for computing wavelet transforms of such Kth sample for scales in powers of 2 running from the 1st power to the 5^{th} and storing signal energy values as computed for each scale;

C. means for checking to determine whether the Kth sample is the last of the sample set and, if additional samples remain, triggering said computing means to repeat;

D. storage means for maintaining a median energy distribution at scale 2 to the 4^{th} power as a threshold;

E. comparator means for comparing energy across the scales for each sample successively and if maximum energy is at the scale for 2 to the 1st power, identifying the segment as unvoiced and proceeding to the next succeeding sample but if the segment maximum energy is at one of the scales 2 to the 2^{nd} power through 2 to the 5^{th} power, identifying the segment as being either voiced or silence and further if segment energy at the 2 to the 4^{th} power scale exceeds the threshold, identifying the segment as voiced; otherwise identifying it as silence.

8. Apparatus for testing voice samples of persons for near-term suicidal risk and providing an alarm signal upon a subject being found to represent a near-term suicidal risk, comprising:

A. counter means for setting an analysis window to a selected sample set length of 512 consecutive segment voice signals from the person,

where the particular sample is identified as the Kth sample, and reading the Kth sample of said person's vocal signal;

B. mathematical processor means for computing wavelet transforms of such Kth sample for scales in powers of 2 running from the 1st power to the 5^{th} and storing the signal energy value as computed for each scale while checking to determine whether the Kth sample is the last of the sample set and if additional samples remain, repeating the wavelet transformation;

C. storage means for setting and storing median energy distribution at the scale for 2 to the 4^{th} power as a threshold;

D. comparator means for successively comparing, for each sample, energy across the scales and testing to determine if the maximum energy is at the scale for 2 to the 1st power and identifying the segment as unvoiced and proceeding to the next succeeding sample but if the segment maximum energy is at one of the scales 2 to the 2^{nd} power through 2 to the 5^{th} power, identifying the segment as being either voiced or silence and further comparing segment energy at the 2 to the 4^{th} power scale for exceeding the threshold and identifying the segment as voiced; otherwise identifying it as silence;

E. means for computing the wavelet transform for the sample set at scale 2 to the 4^{th} power, with a scale factor defined by the quotient of the wavelet center frequency at level 0 and the desired center frequency and selecting two consecutive segments of said vocal signal of such person identified as voiced segments and generating separate pulse trains in which heights of pulses correspond to amplitude of positive and negative peaks of the wavelet transformed speech signal;

F. peak detector means for thresholding the segments of the vocal signal and discarding peaks corresponding to possible unvoiced samples;

G. processor means for computing fundamental period over the entirety of each of the two segments by :

i. finding the location of the first peak of the autocorrelation of the smoothed spectrum to the right of the zero lag component;

ii. detecting a starting pulse exhibiting the property of being larger than the pulse immediately preceding and immediately following such pulse and being greater than 50% of the global maximum of the pulse sequence;

iii. locating following prominent pulses as detected in the neighborhood of expected locations determined by the peak of the autocorrelation sequence;

iv. selecting between two sequences of positive and negative peaks the peak having the largest peak magnitude; and

H. means for taking the difference between two consecutive prominent pulses as the duration for the glottal cycle and determining period-to-period fluctuation of fundamental frequency as the inverse of said glottal cycle for said two consecutive prominent pulses.